



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,410	04/15/2004	David R. Battiste	33939US01	9361
	7590	06/27/2006	CPCM:0006-1/FLE	
Michael G. Fletcher Fletcher Yoder P.O. Box 692289 Houston, TX 77269-2289			EXAMINER TESKIN, FRED M	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/825,410

Applicant(s)

BATTISTE, DAVID R.

Examiner

Fred M. Teskin

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>041504</u> . | 6) <input type="checkbox"/> Other: ____  |

Claims 1-35 are currently pending and under examination.

Applicant's preliminary amendment designating the present application as a "continuation" of prior-filed application No. 09/705,315 is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 09/705,315, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application; specifically, claims 22 and 24-28, directed to a method the first act of which involves "exposing an in-situ polymerization mixture to radiation emission from a spectroscopic probe" (claim 22, ll. 3-4). This subject matter is not adequately described in the prior-filed or instant applications, as their disclosures are confined to the use of a specific type of spectroscopic probe, namely, a Raman probe (as described at, e.g., page 1, ll. 17+, page 7, ll. 10+ and page 28, Abstract) as the source of radiation emission. Claims 22 and 24-28 literally read on radiation emission from *non-Raman* sources (e.g., FT-IR)

Art Unit: 1713

and as such cover subject matter outside the scope of the disclosure of the invention in the '315 application.

As the present application does not disclose *and claim* only subject matter disclosed in the '315 application, its designation as a "continuation" thereof is improper.

This application repeats a substantial portion of prior Application No. 09/705,315, filed November 3, 2000, and adds and claims additional disclosure, as detailed above, not presented in the prior application. Since this application names an inventor or inventors named in the prior application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain such benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

The disclosure is objected to because of the following informalities: at page 11, line 8, the words "have been" are superfluous and should be deleted.

Appropriate correction is required.

Claims 22-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the following grounds for indefiniteness apply to the indicated claims.

(A) Claims 22 and 30 are ambiguous as to the scope of "substantially real-time" (see lines 5-6). It is not clear from the antecedent disclosure how "substantially" is

Art Unit: 1713

intended to affect the customary meaning of "real-time". In fact the specification nowhere delimits "substantially" in the context of the acquisition of a spectroscopic signal, as claimed.

(B) Claim 29 provides the limitation to "the Raman spectroscopic probe" (see line 4). There is no precedent for this limitation in the claim.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 16-21 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 12-17 of US Patent No. 6,723,804.

Claims 16-21 appear substantively identical to patent claims 12-17. Since it does not appear possible to literally infringe the former claims without also infringing the latter, the conflicting claims are deemed drawn to the same invention.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

Art Unit: 1713

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-15 and 22-35 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of US Patent No. 6,723,804. Although the conflicting claims are not identical, they are not patentably distinct from each other because they differ merely in matters of scope and/or semantics.

In particular, instant claims 1, 22, 29 and 35 are generic to the narrower process embodiments as claimed in the patented claims (*cf.*, claims 1 and 10-12 of '804). Consequently, the patent protection already granted in the earlier filed case would be extended by allowance of claims 1-15 and 22-35 in this later filed application. Furthermore, apart from the recital of "a spectroscopic probe" in claim 22, the subject matter claimed herein was fully disclosed in the earlier filed application which became the '804 patent and there is no apparent reason why applicant was prevented from fully prosecuting the broad claims in the parent application. In regard to this latter point, it should be noted that the broad or generic claims to the olefin polymerization process, which were present in the parent application, were not cancelled as a result of a restriction requirement. In addition, the instant claims are drawn to the same invention elected in the parent application which became the '804 patent. See MPEP 804.01 (B).

Art Unit: 1713

Under such circumstances, the allowed claims to the subgeneric embodiments preclude issuance of the generic application claims, absent a terminal disclaimer. *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 10-13, 16-18, 22-25, 27-31 and 33-35 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 6479597 to Long et al ("Long").

The claimed subject matter, as defined in claim 1, is a process for olefin polymerization, comprising the acts of: contacting in a reaction mixture under slurry polymerization conditions reactants comprising at least one olefin monomer with a heterogeneous catalyst system comprising one or more catalytic metal compounds,

making a polyolefin; and monitoring the process by using Raman spectrometry equipment to provide an output signal representative of at least one of the reactants and the polyolefin.

Long discloses a method of olefin polymerization in a slurry loop reactor, the method including the steps of (1) in-situ analysis of one or more reactor constituents by employing Raman spectroscopic techniques to determine the concentration of at least one reactor constituent which may be present in the liquid and/or solid phase; (2) correlating the in-situ collected Raman Spectra to the concentration of the reactor constituent(s); and (3) controlling the metering of the reactor constituent(s) into the reactor in response to the correlating step. (Long, Abstract and col. 1, ll. 15-17; col. 2, ll. 6-37 and 56-62.) Enumerated examples of reactor constituents include polymerized and polymerizable olefins, with polyethylene and polypropylene and homopolymers and copolymers thereof given as specific examples (col. 2, ll. 13-16 and col. 4, ll. 5-15).

Long further provides for achieving desired final properties by correlating reactor constituent concentrations measured in the reactor to final polymer properties and attaining the latter through controlled metering of such reactor constituents into the reactor vessel in response to data generated by an analyzer system including an in-situ probe, such as a fiber optic probe, secured to the reactor vessel. (Id., col. 5, ll. 56+ and col. 7, ll. 10-17.)

Relative to the catalyst system used in the claimed process, Long describes the reaction medium of a slurry loop olefin polymerization reactor as including *solids* such as catalysts, *catalyst supports* and polymerized olefins, and liquids (col. 4, ll. 41-44),



Art Unit: 1713

and is thus seen to disclose with sufficient specificity the use of a heterogeneous catalyst system as claimed. Alternatively, it would have been obvious to one of ordinary skill in the art to use a heterogeneous catalyst system comprising one or more catalytic metal compounds in the Long process given the Long teaching of solids, such as catalysts and catalyst supports, in the slurry loop olefin polymerization reactor.

As such, Long is seen to teach the essential limitations of claims 1-6, 10-13, 16-18, 22-25, 27-31 and 33-35, including the limitations of monitoring the process by using Raman spectrometry equipment to provide an output signal representative of at least one of the reactants and the polyolefin (i.e., species of the Long reactor constituents) as per claim 1, adjusting the concentration of at least one chemical component within the reaction mixture as per claim 4, and creation of a spectral model using partial least squares analysis as per claims 17 and 18, as detailed in column 13, lines 45-55 of Long.

Claims 7-9, 19, 20 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long, alone or in view of US 5678751 to Buchanan et al ("Buchanan").

Long is applied as in the preceding rejection. With respect to claims 8, 9, 19, 20 and 32, it would have been obvious to use low resolution Raman Spectrometry equipment in the process of Long since (1) Long generically teaches the utility of Raman analyzers without limitation as to resolution capability (see, e.g., col. 5, ll. 62-64 and col. 8, ll. 53-56) and (2) one of ordinary skill in the art would have been well aware

Art Unit: 1713

of the lower cost of low resolution Raman analyzers, compared to high resolution equipment. The economic benefits afforded by commercially available low resolution equipment would have provided ample incentive to one so skilled to conduct the analysis step of Long utilizing Raman spectrometry equipment comprising low resolution Raman equipment, as claimed.

As to claim 7, it would have been obvious to one of ordinary skill in the art to perform the analysis step of Long using a Raman fiber optic probe having the claimed construction since (1) Long teaches the suitability of a fiber optic probe (col. 5, ll. 56-57 and 66-67) and (2) Buchanan discloses a Raman fiber optic probe useful for obtaining reliable spectroscopy measurements in harsh environments of elevated temperature and pressure, including polymer production processes, and having a preferred construction which includes optical fibers comprising the requisite quartz (i.e., silica) glass core, surrounded by a thin inner layer of doped quartz and then by a thin solder-adherable metallic outer layer. (Buchanan, col. 4, ll. 37-41 and col. 5, ll. 30+, esp. ll. 54-59 and Fig. 1A.) The metallic outer layer and quartz glass core of the Buchanan probe appear indistinguishable from the "protective metal sheath" and "fused silica fiber optic" elements of claim 7.

Applicant's arguments filed April 15, 2004, have been fully considered but are not persuasive of error in the repeated rejection.

Contrary to applicant's stated position, examiner maintains the effective date of the Long reference is the provisional filing date (July 30, 1999) because the new claims

Art Unit: 1713

added in the non-provisional application are either (1) supported by the earlier provisional application or (2) introduce limitations not required or necessary for patentability.

Relative to point (1), examiner disagrees with applicant's assertion of the Long provisional application being "solely directed" to the use of Raman spectroscopy in the polymerization of the olefin propylene to polypropylene. While it may be true that the working examples (page 15 *et seq.*) are directed to the preparation of polypropylene granules, satisfaction of the written description requirement does not depend on the presence or absence of working examples. The Long provisional application otherwise provides a description of the use of Raman spectroscopy in a method of olefin polymerization wherein reactor constituents are subject to real-time spectroscopic analysis and wherein the reactor constituents are exemplified by the polymerized olefins "polypropylene, *polyethylene*, polyisobutylene, and homopolymers and *copolymers thereof*" and by the polymerizable olefins "propylene, *ethylene*, 1-butene, 1-hexene ..." (provisional appl'n, page 2, line 25 to page 3, line 10 and page 5, lines 13-21; emphasis added). As such, the Long provisional application would have conveyed to those skilled in the art possession of the claimed embodiments directed to the use of Raman spectroscopy in the polymerization of the ethylene to polyethylene homo- and co-polymers.

Relative to point (2), the subject matter of the new claims added in the non-provisional application relates to additional species of olefin other than propylene. The use of Raman spectroscopy in a method of olefin polymerization is nevertheless

Art Unit: 1713

disclosed and claimed in the provisional application and that invention is patentable *without* the added limitations to specific species of olefin and determination of their concentration. Accordingly, the provisional application is found to disclose a patentable invention, which invention is reflected in the disclosure and claims of the Long patent. *Cf., Ex parte Ebara*, 19USPQ2d 1952 (BdPatApp&Int 1991). The reasoning set forth on pages 1954-55 thereof is believed applicable by analogy herein, and distinguishes the present fact situation from that addressed in the *Wertheim* decision, cited and relied upon by applicant, wherein those claim limitations of the reference patent missing from the Pfluger application were found to be a *necessary* part of the *only* patentable invention ever set forth in the Pfluger file history.

Examiner therefore maintains that the Long patent is effective as a reference as of July 30, 1999, with respect to the use of Raman spectroscopy in a method of olefin polymerization in a slurry or liquid phase reactor.

The declaration filed on April 15, 2004, under 37 CFR 1.131 has been considered but is ineffective to overcome the Long reference.

The declaration is ineffective because (1) it alleges an actual reduction to practice of the subject matter disclosed and claimed in the instant application of "at least as early as August 30, 1999" (Dec., parag. 4), which does not antedate the Long reference in view of its effective date of July 30, 1999, as detailed above; and (2) the evidence submitted is insufficient to establish a reduction to practice of the invention as *claimed* in this country (or a NAFTA or WTO member country) prior to the effective date

of the Long reference, even assuming, *arguendo*, a later effective date of July 28, 2000, the filing date of the first non-provisional application.

Further in regard to point (2), the evidence submitted consists of copies of five pages of applicant's laboratory notebook. Applicant describes the exhibits only in general terms as a recordation of "the test results of a Raman spectrophotometer in a polymerization reactor in preparation of an actual reduction to practice of the claimed subject matter" and "the results of a successful test of an implementation of the claimed subject matter" (Dec., parags. 3 and 4). However, general statements in broad terms about what the exhibits describe along with a general assertion that the exhibits describe a reduction to practice "amount essentially to mere pleading, unsupported by proof or a showing of facts" and, thus, does not satisfy the requirement of Rule 131(b). *In re Borkowski*, 184 USPQ 29 (CCPA 1974). Applicant must give a clear explanation of the exhibits pointing out what facts are established and relied on by applicant. See MPEP 715.07.

Upon reviewing the content of the exhibits, it is unclear wherein the notebook entries establish an actual reduction to practice of the invention as claimed. In particular, while certain polymerization conditions are recorded, e.g., "Raman/Batch Scale Ethylene Polymerization" and "ethylene [and] isobutane in liquid reactor contents" see pages 31-32, the mode of catalysis is not apparent from any of the entries on pages 31-35. Applicant's invention as defined in claim 1 requires a reaction mixture comprising "a heterogeneous catalyst system comprising one or more catalytic metal compounds". The declaration fails to explain and it is not apparent from an independent

Art Unit: 1713

review of the exhibits wherein the recorded test results indicate the use of such heterogeneous catalyst in a process meeting the terms of the claims.

The Rule 131 Declaration filed on April 15, 2004 being found ineffective to overcome the Long reference, the continued prior art rejections are still deemed tenable and therefore must be maintained.


No claims are allowable at this time.

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/06-20-06

  
**FRED TESKIN**  
**PRIMARY EXAMINER**  
1713